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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,480	03/12/2004	Takayuki Ishii	Q80462	6262
23373	7590	08/21/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			COLILLA, DANIEL JAMES	
			ART UNIT	PAPER NUMBER
			2854	

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,480

Applicant(s)

ISHII ET AL.

Examiner

Daniel J. Colilla

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-14,16-18 and 21-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14,16,17 and 36 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,9,10,18 and 21-35 is/are rejected.
- 7) ☒ Claim(s) 7,8 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2004 and 16 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/12/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

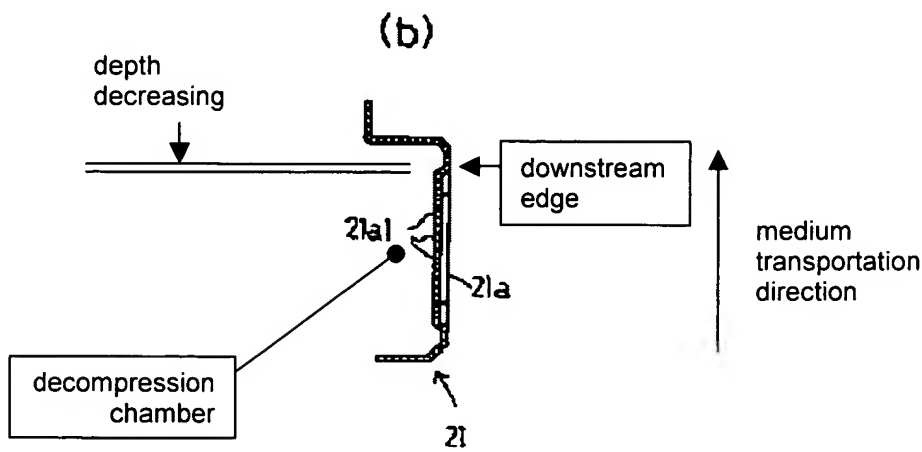
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

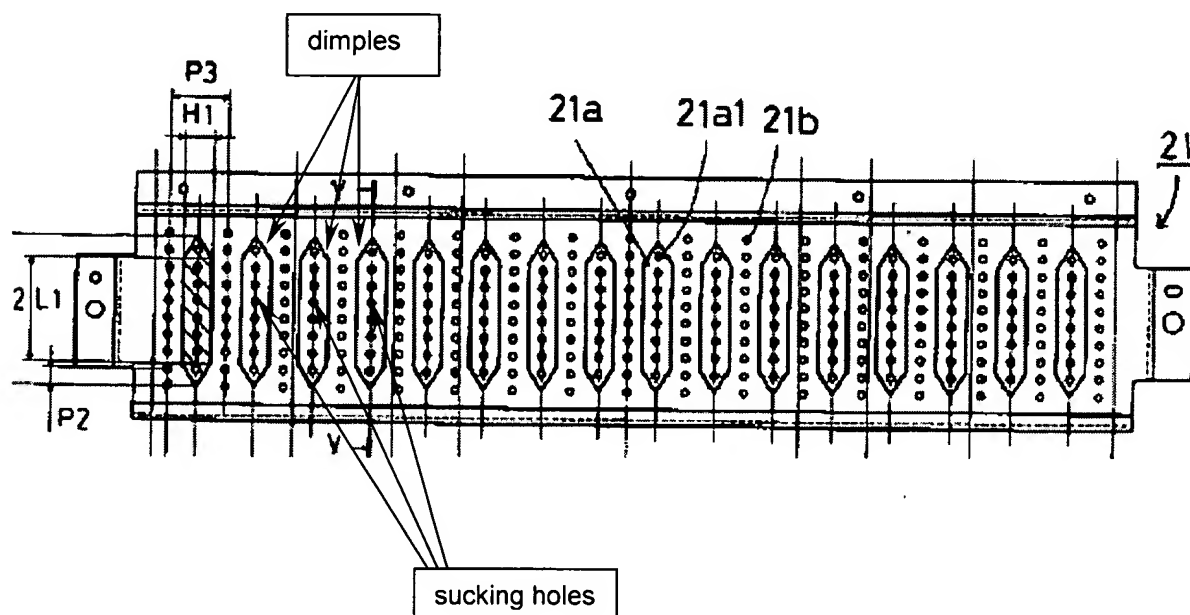
2. Claims 18 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (JP 8-156351).

With respect to claim 18, Sato discloses a medium transportation apparatus including a plurality of dimples 21a provided in the medium transportation surface 10 having a depth that changes in a transportation direction of the medium as shown above in the Figure taken from Figure 6(b) of Sato. Figure 6(b) shows the sucking unit disclosed by Sato which includes a plurality of sucking holes 21a1 formed in the dimples 21a best shown in Figure 6(a) of Sato. The below Figure taken from 6(b) of Sato shows the decompression chamber disclosed by Sato:



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Figure 2 of Sato shows a sucking device 19 for sucking air in the decompression chamber. Each dimple 21a is formed such that a depth is gradually decreased toward an edge on a downstream side along a transportation direction of the medium as shown above.



With respect to claim 21, Sato discloses a liquid fixing apparatus (ink jet printer) comprising the medium transportation apparatus.

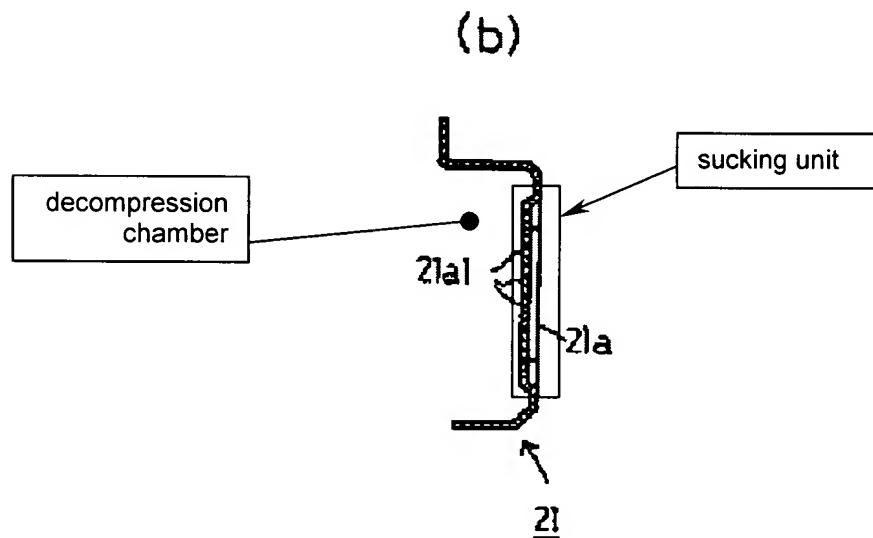
Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

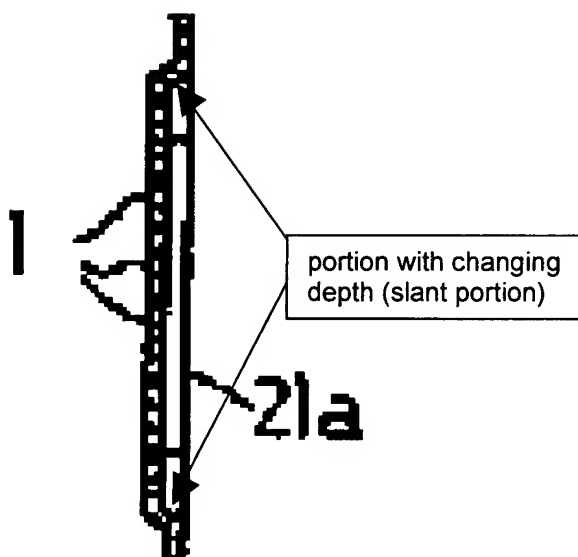
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 9, 10 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Hinojosa et al. (US 6,517,179).

With respect to claim 1, Sato discloses the claimed medium transportation apparatus except for the flared slant faces. Sato discloses a sucking unit including a medium transportation surface 10 provided with a plurality of sucking holes 21a1 as shown in Figure 6(a) and the below Figure taken from Figure 6(b) of Sato:



Sato further discloses a decompression chamber that communicates with the sucking holes 21a1 as shown above. Sato also discloses a delivering section 4,5 as shown in Figure 1 of Sato for delivering a medium from an upstream side of the sucking unit to a downstream side thereof. Each of the sucking holes 21a1 is formed by a through hole section communicating with the decompression chamber and a sucking chamber as shown in Figure 6 of Sato, and the area of a sucking surface opposed to the medium is larger than a sectional area of the through hole section as shown in Figure 6(a). The below Figure taken from Figure 6(b) of Sato shows a side edge of each sucking chamber provided with a slant face:



Hinojosa et al. teaches a medium transportation apparatus with sucking chambers 13 having sucking holes 14 as shown below in the Figure taken from Figure 2 of Hinojosa et al.:

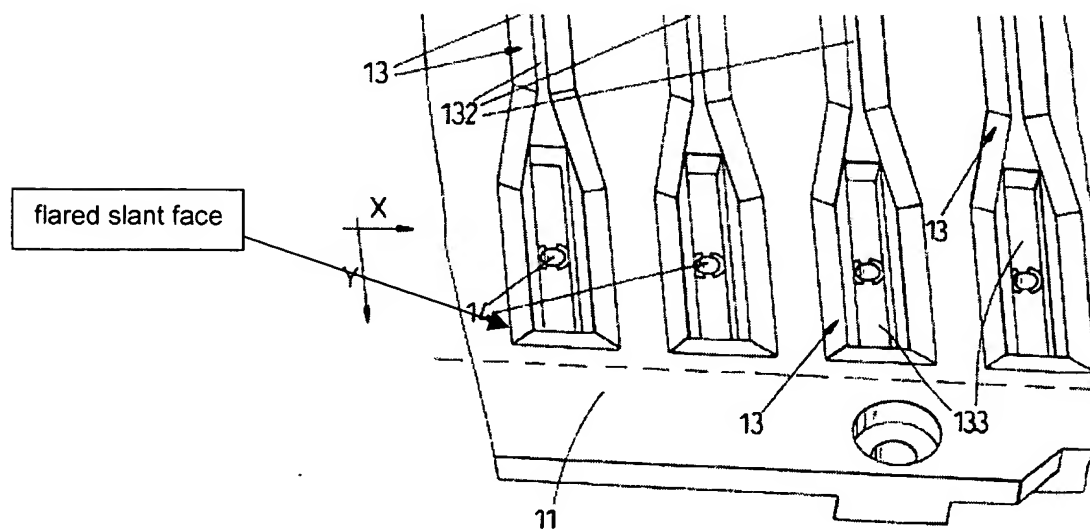


Fig. 2

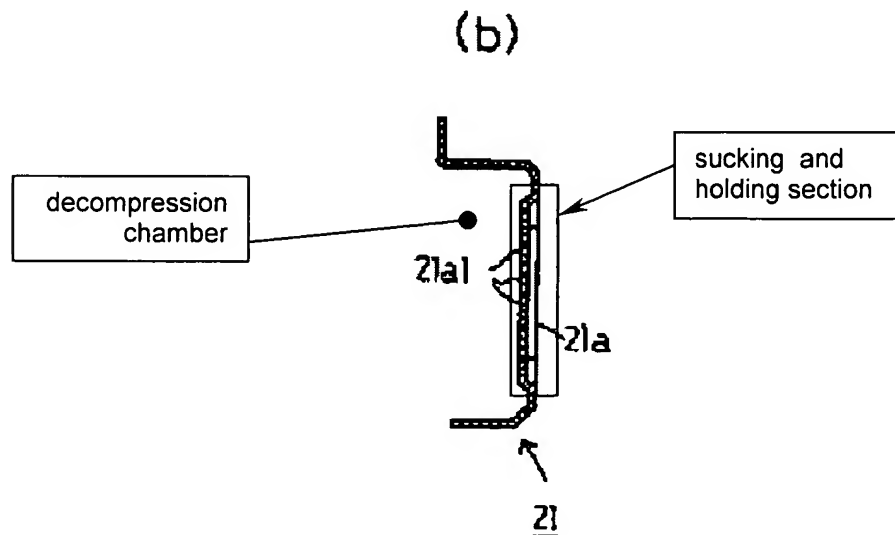
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As shown in the Figure above, the side edges of the sucking chambers have flared slant faces. It would have been obvious to combine the teaching of Hinojosa et al. with the medium transportation apparatus disclosed by Sato for the advantage of controlling cockle of the sheet being transported (Hinojosa et al., col. 6, lines 29-38).

With respect to claim 2, each of the sucking chambers is formed by a concave portion formed in the medium transportation surface 10 and the sucking chambers are mutually partitioned by partition walls as shown in Figure 6(a) of Sato.

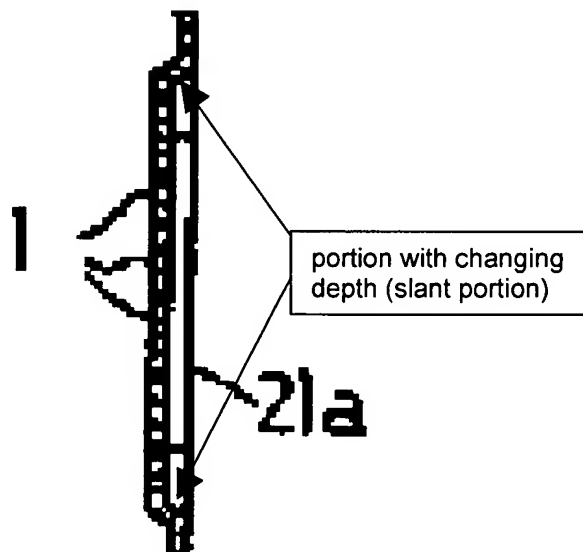
With respect to claim 9, Sato discloses that the fixed material transportation apparatus is in a liquid fixing apparatus (printer) as shown in Figure 2 of Sato.

With respect to claim 10, Sato discloses the claimed medium transportation apparatus except for the flared slant faces. Sato discloses a sucking and holding section provided with a plurality of sucking holes 21a1 as shown in Figure 6(a) and the below Figure taken from Figure 6(b) of Sato:



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Sato further discloses a decompression chamber formed integrally with the sucking and holding section that communicates with the sucking holes 21a1 as shown above. Figure 2 of Sato shows a sucking device 19 for sucking air in the decompression chamber. Figure 2 also shows a medium being sucked onto the sucking and holding section by the sucking device 19. Each of the sucking holes 21a1 is formed by a through hole section communicating with the decompression chamber and a sucking chamber as shown in Figure 6 of Sato, and the area of a sucking surface opposed to the medium is larger than a sectional area of the through hole section as shown in Figure 6(a). The below Figure taken from Figure 6(b) of Sato shows a side edge of each sucking chamber provided with a slant face:



Hinojosa et al. teaches a medium transportation apparatus with sucking chambers 13 having sucking holes 14 as shown in the above Figure taken from Figure 2 of Hinojosa et al. As shown in the Figure, the side edges of the sucking chambers have flared slant faces. It would have been

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obvious to combine the teaching of Hinojosa et al. with the medium transportation apparatus disclosed by Sato for the advantage of controlling cockle of the sheet being transported (Hinojosa et al., col. 6, lines 29-38).

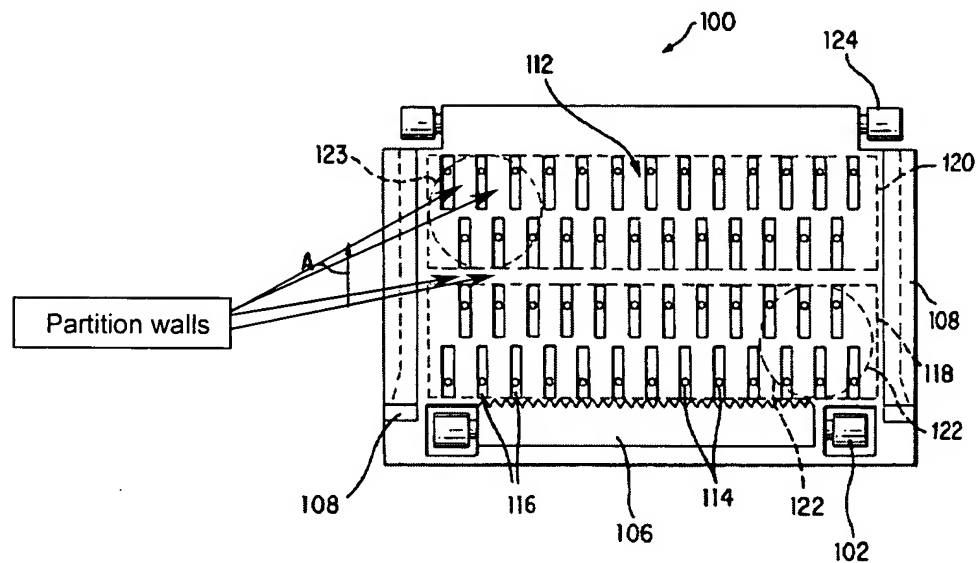
With respect to claim 35, Sato discloses the claimed medium transportation apparatus except for the flared slant faces. Sato discloses a medium transportation apparatus including a medium transportation surface 10, a plurality of sucking chambers 21a, formed on the medium transportation surface 10 aligned in a transportation direction of the medium transportation surface, and a sucking hole 21a1 formed substantially in the center of each sucking chamber 21a as shown in Figures 6(a) of Sato. Further disclosed is a side edge of each sucking chamber being provided with a slant face as shown in the above Figure taken from Figure 6(b) of Sato. Hinojosa et al. teaches a medium transportation apparatus with sucking chambers 13 having sucking holes 14 as shown in the above Figure taken from Figure 2 of Hinojosa et al. As shown in the Figure, the side edges of the sucking chambers have flared slant faces. It would have been obvious to combine the teaching of Hinojosa et al. with the medium transportation apparatus disclosed by Sato for the advantage of controlling cockle of the sheet being transported (Hinojosa et al., col. 6, lines 29-38).

5. Claims 3-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Hinojosa et al. (US 6,517,179), as applied to claim 1 above, and further in view of Teumer *et al.* (US 6,179,285).

With respect to claim 3, Sato in view of Hinojosa et al. discloses the claimed apparatus except for the concave portion being partitioned by partition walls in a subscanning direction.

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Figure 6(a) of Sato shows the sucking chambers partitioned by partition walls in the scanning direction. Teumer *et al.* teaches partitioning walls in a subscanning direction as shown below in the Figures taken from Figures 1 and 2 of Teumer *et al.*:

**FIG. 1**

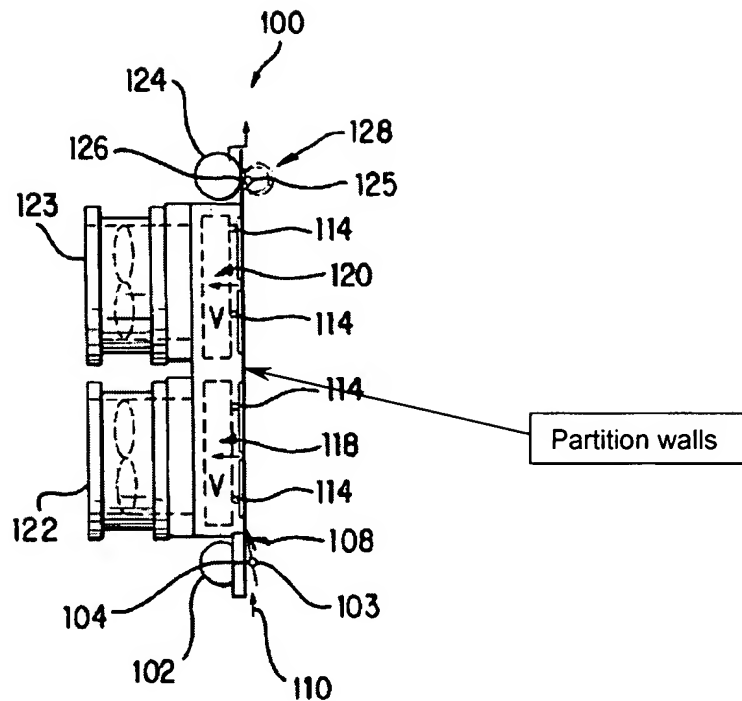
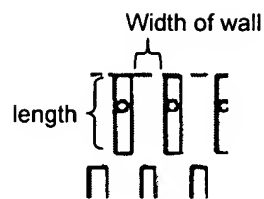


FIG. 2

It would have been obvious to combine the teaching of Teumer *et al.* with the apparatus disclosed by Sato in view of Hinojosa *et al.* for the advantage of guides 108 and spring plate 106 that assist in guiding the media to the platen.

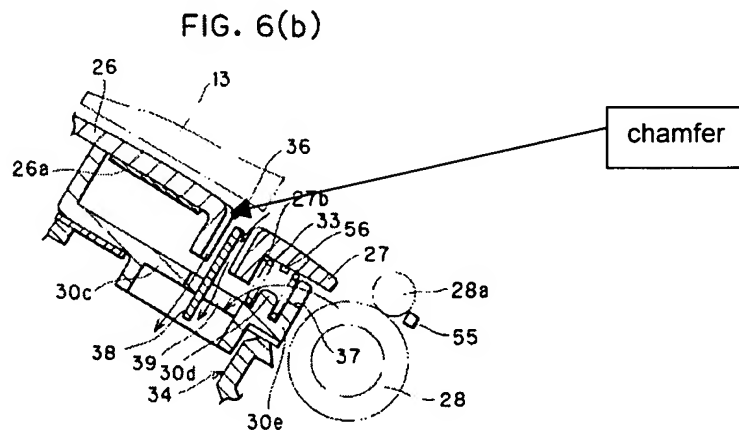
With respect to claim 4, Teumer *et al.* each of the sucking chambers 116 has a sucking surface formed by an almost rectangular concave portion. It is noted that no manufacturing process will ever achieve a perfect rectangle and therefore the sucking chamber 116 disclosed by Teumer can be considered “almost” rectangular.

With respect to claim 6, as shown below (Figure taken from Figure 1 of Teumer), the width of the top of the partition wall is smaller than a length of the sucking chamber 116.



6. Claims 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Ito et al. (US 6,196,672).

With respect to claim 29, Sato discloses the claimed medium transportation apparatus except for the chamfer. However, Ito discloses a fixed material transportation apparatus including a transportation surface 26 on which a fixed material is sucked and transported. A chamfer is provided at an air inlet portion of a sucking hole 36 formed in the surface 26 as shown below in the Figure taken from Figure 6(b) of Ito et al.:



It would have been obvious to combine the teaching of Ito with the apparatus disclosed by Sato for the advantage of the cooling fan 35 for cooling the apparatus while it operates.

With respect to claim 30, the chamfered surface is a rounded surface.

With respect to claims 31 and 33, Sato in view of Ito et al. discloses the claimed apparatus except for that the dimensions of the chamfered surface are not known to the examiner. However, the optimal dimensions of the surface would have readily been obvious to one of ordinary skill in the art through routine experimentation. It has been held that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.");< ** In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

With respect to claim 32, interpreting the term "taper surface" broadly, the chamfer can also be considered a taper surface.

With respect to claim 34, Ito et al. discloses a liquid fixing apparatus.

7. Claims 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Hinojosa et al. (US 6,517,179), as applied to claim 1 above, and further in view of Kanemura (JP 07-009712).

With respect to claim 22, Sato in view of Hinojosa et al. discloses the claimed fixed material transportation apparatus except for the hard porous material. Sato discloses the claimed apparatus as mentioned in the above prior art rejection of claim 1. Kanemura teaches a platen 10 that can be made of a porous, ceramic material (ceramic being a hard material). It would have

been obvious to combine the teaching of Kanemura with the apparatus disclosed by Sato in view of Hinojosa et al. for the advantage of a platen that absorbs ink that is ejected outside the perimeter of the printing material and prevents the soiling of subsequently fed printing materials.

With respect to claim 23, Kanemura teaches providing a hard porous material 10 at locations corresponding to widths of various papers as shown in Figure 5(a) of Kanemura.

With respect to claim 24, Figures 3-6 of Kanemura teaches providing the hard porous material 10 in a lateral direction.

With respect to claim 25, Kanemura teaches a slide 30 for removing the hard porous material 10 (see paragraph [0028] of the machine translation of Kanemura).

With respect to claim 26, Kanemura teaches providing an ink absorbing material 31 to the underside of the hard porous material 10 as shown in Figure 6(b) of Kanemura (see paragraph [0032] of the machine translation of Kanemura).

With respect to claim 27, Sato discloses a decompression as shown in the Figures above.

With respect to claim 28, both Sato and Kanemura disclose a liquid fixing apparatus comprising the fixed material transportation apparatus.

Allowable Subject Matter

8. Claims 11-14, 16-17 and 36 are allowed.

9. Claims 7-8 and 37 are objected to as being dependent upon a rejected base claim, and rejected for the above mentioned informalities, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening claims and if rewritten to overcome the above mentioned informalities.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claim 37 has been indicated as containing allowable subject matter primarily for the side edges of the sucking chamber surrounding an entire periphery thereof are provided with flared slant faces.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 2-6, 9, 10, 22-28 and 35 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claims 18, 21 and 29-34, the rejection from the previous Office action has been maintained with a discussion of how the references read on the new limitations.

The amendment to claim 36 has resulted in its allowability, and for similar reasons claim 37 has been objected to as depending from a rejected claim but containing allowable subject matter.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Colilla whose telephone number is 571-272-2157. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached at 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 11, 2006

A handwritten signature in black ink, appearing to read "Daniel J. Colilla".

Daniel J. Colilla
Primary Examiner
Art Unit 2854